

CLAIMS

1. (Previously presented) A method of transmitting data in a digital communication system including a transmitting station, a relay station, and a plurality of receivers, said method comprising:

transmitting from said transmitting station to said relay station a primary data signal containing a plurality of primary data packets, each said primary data packet intended for a specific one of said receivers.

transmitting from said relay station said primary data signal over a broadband channel to said plurality of receivers;

transmitting an index signal over a narrow band channel from said relay station to said plurality of receivers, wherein said index signal comprises a plurality of index data packets, each said index data packet corresponding to a respective one of said primary data packets and containing address information addressing a specific one of said receivers, said index signal extracted from said primary data signal;

receiving and decoding said index signal at said plurality of receivers;

determining and selecting, at each said receiver, those primary data packets in said primary data signal that are intended for said receiver based on address information in said index data signals; and

extracting and decoding the selected primary data packets in said primary data signal at said plurality of receivers.

2. (Cancelled)

3. (Previously presented) The method of claim 1 wherein the index signal is transmitted at the same rate as the primary data signal.
4. (Previously presented) The method of claim 1 where each receiver demodulates and decodes the index data signal in real-time.
5. (Original) The method of claim 1 wherein the primary data signal is temporarily buffered by the receiver for later demodulation and decoding.
6. (Original) The method of claim 1 wherein the index signal includes a plurality of packets, each packet in said index signal including an identification field containing information for identifying a particular receiver and a packet identification field for identifying corresponding packets in said primary data signal.
7. (Original) The method of claim 1 wherein the packets in the index signal correspond to the packets in the primary data signal.
8. (Previously presented) A method of transmitting data in a digital communication system between a transmitting station and a plurality of receivers, said transmitting method comprising:
  - transmitting a primary data signal from said transmitting station to a relay station,
  - wherein said primary data signal contains a plurality of primary data packets,
  - each said primary data packet intended for a specific one of said receivers;
  - extracting a plurality of index data packets from said primary data signal at said relay station, wherein each said index data packet corresponds to a respective one of said primary data packets and contains address information addressing a specific one of said receivers;

re-transmitting said primary data signal from said relay station to said plurality of receivers over a broadband channel;

transmitting an index signal from said relay station to said plurality of receivers over a narrow band channel, wherein said index signal contains said plurality of index data packets extracted from said primary data signal for selecting said primary data packets in said primary data signal;

receiving and decoding said index signal at said plurality of receivers;

determining and selecting, at each said receiver, those primary data packets in said primary data signal that are intended for said receiver based on address information in said index data signal;

extracting and decoding the selected primary data packets in said primary data signal at said plurality of receivers.

9. (Cancelled)

10. (Previously presented) The method of claim 8 where the primary data signal is transmitted at a rate of variable bit rates from 2 Mbps to 64 Mbps.

11. (Cancelled)

12. (Previously presented) The method of claim 8 wherein the index signal is transmitted at the same rate as the primary data signal.

13. (Previously presented) The method of claim 8 wherein receiving and decoding said index signal at said plurality of receivers is done in real-time.

14. (Previously presented) The method of claim 8 further comprising the step of temporarily buffering the primary data signal prior to its demodulation and decoding.

15. (Previously presented) The method of claim 8 wherein the index signal includes a plurality of packets, each packet in said index signal including an identification field containing information for identifying a particular receiver and a packet identification field for identifying corresponding packet(s) start time in said primary data signal.

16. (Previously presented) The method of claim 8 wherein the packets in the index signal correspond to the packets in the primary data signal.

17. (Previously presented) A broadband communications system comprising:

a relay station including:

receiving means for receiving a broadband primary data signal;

first transmitting means for transmitting said broadband primary data signal to a plurality of receivers, wherein said broadband signal [having] includes a plurality of data packets each addressed to a selected receiver; and

a second transmitting means for transmitting a narrow band index signal

extracted from said primary data signal, said index signal including addressing information for identifying the location of data packets in said broadband signal intended for a selected receiver and the start time of those packet(s); and

a plurality of receivers for receiving said primary data signal and said index signal, each receiver including:

a first signal processing means for demodulating and decoding said index signal to extract said addressing information;

a second signal processing means for demodulating and decoding said primary data signal; and  
control means for selectively activating said second signal processing means based on addressing information in said index signal.

18. (Previously presented) The communication system of claim 17 wherein said receiver further includes an input buffer for temporarily storing said received primary data signal before demodulating and decoding portions of said primary data signal.

19. (Currently amended) A receiver for a broadband communication system comprising:

a continuously operative first signal processing means for demodulating and decoding input stream operative to demodulate and decode a received narrow band index signal to ~~extract addressing information contained in said index signal;~~

~~a second signal processing means for demodulating and decoding~~ a second input stream selectively operative to demodulate and decode portions of a received broadband primary data signal; and

~~control means for~~ a controller in said first input stream operative to monitor said narrow band index signal and, upon detection of addressing information that matches a predetermined address associated with said receiver, to selectively activating enable said second signal processing means based on addressing information in said index signal input stream to capture and extract data associated with said addressing information from said broadband primary data signal, without tuning said second input stream to a different frequency.

20 (Currently amended) The ~~communication system receiver~~ of claim 19 ~~wherein said receiver further includes~~ comprising an input buffer in said second input stream operative to temporarily

storing store a portion of said received broadband primary data signal before demodulating and decoding portions of said received broadband primary data signal in response to said controller.

21. (Previously Presented) A relay station, interposed between a broadcast service provider and a subscriber, said relay station extracting an index signal from a primary broadband signal, said index signal containing an address and program time related information for a subscriber, and said relay station relaying said index signal to said subscriber on a narrow band signal, and transmitting primary information to said subscriber on a broadband channel.

22. (New) The receiver of claim 20 wherein said controller accesses packet start time information in said received narrow band index signal, and enables said buffer via said packet start time information to capture said data.

23. (New) A ground-based receiver for a satellite communication system, comprising:

- a first input stream operative to receive from a satellite, and demodulate and decode, a narrowband index data signal comprising only data packet header information including packet addresses, and to match addresses in said header information with a predetermined address unique to said receiver;
- a second input stream operative to receive from a satellite, and buffer, demodulate and decode selective portions of, a broadband primary data signal comprising complete data packets addressed to a plurality of receivers; and
- a controller in said first input stream operative to enable the second input stream to buffer a portion of said broadband primary data signal upon matching said receiver's unique address to a data packet address in said narrowband index signal.

24. (New) The receiver of claim 22 wherein said data packet header information in said narrowband index data signal additionally comprises packet start time information, and wherein said controller uses said packet start time to enable the second input stream to buffer said portion of said broadband primary data signal.

25. (New) The receiver of claim 23 wherein said data packet header information in said narrowband index data signal comprises 21 bits.

26. (New) The receiver of claim 24 wherein the first 13 bits of said data packet header information contains the address of a receiver and the next 8 bits contain the packet start time for the corresponding data packed in said broadband primary data signal.

27. (New) A method of receiving packet data addressed to a particular receiver, comprising:  
receiving and continuously demodulating and decoding in a first receiver path a narrowband index signal comprising only data packet header information including target receiver addresses, and comparing said addresses to a predetermined address unique to said particular receiver;  
intermittently receiving, buffering, demodulating and decoding in a second receiver path portions of a broadband primary data signal comprising complete data packets addressed to a plurality of receivers; and  
in response to matching a target receiver address in said narrowband index signal with said predetermined address unique to said particular receiver, enabling said second receiver path to obtain a complete data packet corresponding to the matched target receiver address, without retuning said second receiver path.

28. (New) The method of claim 26 further comprising extracting packet start time information from said data packet header information in said narrowband index signal, and using said start time information to enable said second receiver path at a time effective to capture said complete data packet.

29. (New) A method of receiving data packets addressed to a particular receiver, comprising:  
monitoring a narrowband broadcast signal containing only packet addresses and packet start times;  
detecting a match between a packet address and a unique receiver address; and  
after detecting said address match, using an associated start time to transiently receive a portion of a broadband broadcast signal containing complete data packets, for only a duration sufficient to capture the data packet having the matching packet address.